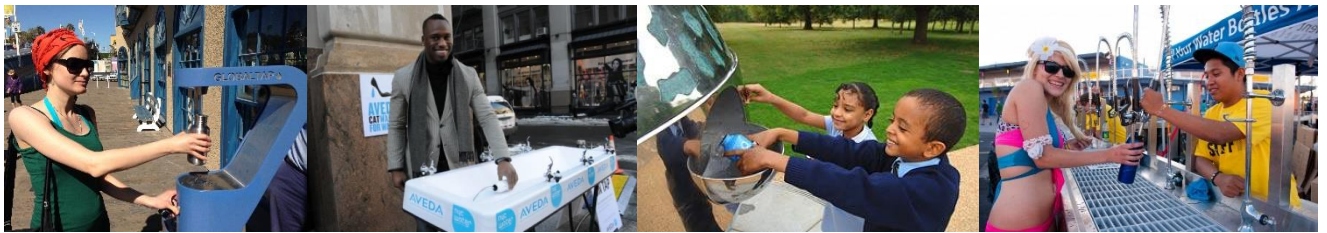


The Equitable and Sustainable Alternative: Bringing Back the Invisible Drinking Fountain

The Provision of Public Drinking Fountain in Various U.S. and International Cities



Abstract

Due to a low accessibility and poor perception of public drinking fountain combined with strong advertising by bottled water companies, bottled water has become more popular in providing hydration to us every day. Yet, tap water could be a cheap, safe, convenient and sustainable option.

This paper examined eleven developed and urban cities around the world on their provision of public drinking fountain. By gathering best practices from all locations, four major recommendations are given to Los Angeles to bring back the drinking fountains, which are Infrastructure, Perception, Partnership and Awareness. The paper also researched on banning water bottled and improving access to drinking fountains within college campuses. The ultimate goal of this research is to revive our invisible drinking fountains and instill public confidence in tap water in Los Angeles and around the world.

Introduction

Bottled water has increased in popularity over the recent decades. In United States, the annual total number of bottled water sold and total spending has reached 30 billion and \$11.8 billion respectively.¹ Although the bottled water industry is expanding every year, compared to tap water, bottled water costs 300 times more.² Moreover, in 2007, it took the energy equivalent of 32 and 54 million barrels of oil to produce and transport plastic water bottle. Even worse, 75% of empty plastic bottles end up in landfills or our lakes, rivers and oceans.³ Bottled water is neither an equitable nor sustainable option for us.

Besides, tap water is indeed a safe option for the public, which is usually contrary to public perception which is masked by strong advertising by bottled water companies. Tap water has a more stringent regulation under the Safe Drinking Water Act by Environmental Protection Agency (EPA) than bottled water, which is regulated under the Food and Drug Administration (FDA) in the United States.⁴ In contrast, in June 2015, Niagara Bottling LLC, a California-based bottled water producer, recalled nineteen brands of bottled water due to *E. coli* bacteria discovered at the manufacturing plants.⁵

Drinking water is a basic human right that should be freely accessible to everyone. Therefore, it is critical to rethink the provision of tap water through drinking fountains in public areas. This paper will provide highlights of successful and innovative practices and policies in many cities. This research also collected best practices from numerous universities as recommendation for universities and colleges to reduce the sale of bottled water and increase the number of drinking fountains in campus. Several recommendations are offered on actions that Los Angeles can execute in the future to reach the objectives of increased usage of tap water and minimize the consumption of bottled water.

¹ Drop The Prop, International Bottled Water Association. (2015, April 9th). *Bottled Water Industry Statistics*.

² Boesler, M. (2013, July 12). *Bottled Water Costs 2000 Times As Much As Tap Water*. Retrieved from Business Insider: <http://www.businessinsider.com/bottled-water-costs-2000x-more-than-tap-2013-7>

³ Food & Water Watch. (2015). *Bottled Water Costs Consumers and the Environment*. Retrieved from Food & Water Watch:

<http://www.foodandwaterwatch.org/water/bottled/bottled-water-bad-for-people-and-the-environment>

⁴ United States Government Accountability Office (GAO). (2009). *Bottled Water: FDA Safety and Consumer Protections Are Often Less Stringent Than Comparable EPA Protections for Tap Water*.

⁵ Brumfield, B., & Colwell, A. (2015, June 23). *14 brands of bottled water recalled due to possible E. coli*. Retrieved from CNN: <http://www.cnn.com/2015/06/23/us/niagara-e-coli-bottled-water-recall/>

Methodology and Challenges

This paper examines case studies from numerous international and U.S. cities, primarily through internet research on best practices, policies and city plans. As the main purpose of the paper is to provide Los Angeles with suitable recommendations on promoting public drinking fountain, most of the information focuses on qualitative data on best practices by different cities.

Locations of developed and urban cities are chosen strategically, including San Francisco, New York City, Vancouver, Hong Kong, Taipei, London and Amsterdam. Special highlights are provided for three cities in the United States, namely Oskaloosa City, City of Irvine and Concord, due to its high significance in terms of their unique policies that is worth referencing from. However, a major challenge faced during this research was websites that offered information in languages other than English and Chinese, such as websites of cities in South America, Europe and parts of Asia.

Another challenge appears on the research of **installation and maintenance policies** for public drinking fountain. Due to a low popularity in discussing drinking fountain policies and/or low transparency on the internet, it is difficult to obtain relevant documents on public drinking fountain policies. All cities in the United States include drinking fountains as a basic amenities, alongside with washrooms. It is hoped that in the future, more cities would consider passing laws and policies on mandating public drinking fountains. These detailed policies should include locations, numbers and installation and maintenance policies (including frequency of cleaning and testing and the responsible party).

Yet, the bigger issue this paper hopes to highlight is how cities overlook the importance of public drinking fountains and free access to safe drinking water at large. For most cities, information on public drinking fountains is very limited, or nonexistent. Providing public drinking fountains not only benefits a community's wellbeing and sustainability, making such information readily available could definitely instill public confidence in public drinking fountains and increase the consumption of tap water.

Overview of provision of public drinking fountains in major cities

Cities	Governing Body	City Plan that includes Drinking Fountain Provision	Best Practices	Drinking Water Quality Standard Reports
Los Angeles, California, USA	Los Angeles Department of Water and Power (LADWP)	Plan for a Healthy Los Angeles , by Los Angeles Department of City Planning (March 2015)	Campaign (Tap Water Day); Partnership and Mobile App (WeTap); LA Council Motion	L.A.'s Drinking Water Quality Report for the period of Jan 1 – Dec 31, 2014 , by Los Angeles Department of Water & Power (LADWP)
San Francisco, California, USA	San Francisco Public Utilities Commission (SFPUC)	San Francisco Park Maintenance Standards: The Manual and Evaluation Form , by San Francisco Recreation and Park Department (August 2006)	Partnerships (GlobalTap , TapIt); Banning Bottled Water	Annual Water Quality Report 2014 , by San Francisco Public Utilities Commission (SFPUC)
New York City, New York, USA.	New York City Department of Environmental Protection (DEP)	Active Design Guidelines: Promoting Physical Activity and Health in Design , by New York City Departments of Design and Construction, Health and Mental Hygiene, Transportation (DOT), & City Planning (2009)	Campaign, Partnership and Mobile App (Water-on-the-Go); Campaign (100 Fountains); Banning Bottled Water	New York City 2014 Drinking Water Supply and Quality Report , by Department of Environmental Protection (DEP)
Vancouver, Canada	The city of Vancouver , maintained by Vancouver Park Board	Greenest City 2020 Action Plan , by City of Vancouver (2012)	Petition (Take Back the Tap); Mobile App (Tap Map); Banning Bottled Water	2013 Vancouver Water Utility Annual Report , by the city of Vancouver Waterworks Utility

Overview of provision of public drinking fountains in major cities (cont.)

Cities	Governing Body	City Plan that includes Drinking Fountain Provision	Best Practices	Drinking Water Quality Standard Reports
Hong Kong	Leisure and Cultural Services Department (LCSD)	N/A	Signs and Posters; Mobile App (Water for Free)	Guidelines for Drinking-water Quality, Fourth Edition , by World Health Organization (WHO)
Taipei, Taiwan	Taipei Water Department	N/A	Infrastructure (Taipei Mass Transit Corporation); Mobile (QR Code)	International Comparison of Water Quality (2008) , by Taipei Water Department
London, U.K.	Local authorities	N/A	Re-designing drinking fountains; Partnership (Thames Water and Hydrachill); Mobile App (Find-a-fountain)	Water Supply (Water Quality) Regulations 2010 , enforced by Drinking Water Inspectorate (DWI)
Amsterdam, the Netherlands	N/A	N/A	Infrastructure	2014 Water Quality Report , by Holland Board of Public Works

Provision of public drinking fountains in major cities

- San Francisco, California, USA

Partnerships with GlobalTap and TapIt

GlobalTap's mission is to provide "Clean, free and accessible water" in cities, schools and communities.⁶ In 2009, San Francisco Department of the Environment (SFE) and San Francisco Public Utilities Commission (SFPUC) established a new partnership with GlobalTap to install more water refilling stations around San Francisco.⁷ Currently, there are 11 GlobalTap stations in San Francisco, including at the airport, museums, parks and other major public areas.

By partnering with GlobalTap, SFE and SFPUC is able to expand its public drinking water infrastructure with minimal installation costs, as well as increase accessibility and convenience for residents and visitors to enjoy free drinking water in public areas.



Figure 1 - GlobalTap station in San Francisco

⁶ GlobalTap. (2015). *GlobalTap*. Retrieved from http://globaltap.org/content/uploads/sites/21/2013/04/bottled_water_factsheet.pdf

⁷ San Francisco Department of the Environment. (2009, December 16). *SF Announces New Tap Water Partnerships in Next Phase of Anti-Bottled Water Education Campaign*. Retrieved from <http://sfenvironment.org/news/press-release/sf-announces-new-tap-water-partnerships-in-next-phase-of-anti-bottled-water>

At the same time, SFE and SFPUC also partnered with TapIt to share a list of cafes, restaurants and other businesses throughout San Francisco where people can refill their water bottle.⁷ These partnerships assist San Francisco to promote its drinking water through improved accessibility of locating refillable water stations. It is proven that locating partner organizations with the same mission could speed up the ability to reach San Francisco's objectives, through infrastructure and through mobile networks.

Drinking Fountain Provision Policy

However, policy-wise, the provision of drinking fountains is rather weak in San Francisco. Under the San Francisco Park Maintenance Standards PF14: Amenities and Structures, standard for the drinking fountains does not include many details:

Drinking fountain standard description under PF14.2:

"Drinking fountains are accessible, operational, and free of standing water and debris."⁸

For further improvements on this Standards, objective and specific standards should be set for all drinking fountains under the Recreation and Park Department, for example, number of population to be served by each fountain, maintenance policies and water quality standards for water from drinking fountain.

Banning bottled water

In 2014, San Francisco approved an ordinance to ban the sale of plastic water bottles on city-owned property. It is the first major city in the United States to ban the sale of plastic water bottles. As the Ordinance author and county supervisor David Chiu stated, "San Francisco has been leading the way to fight for our environment. That's why I ask you to support this ordinance to reduce and discourage single-use, single-serving plastic water bottles in San Francisco."⁹

⁸ Recreation and Park Department. (2006). *San Francisco Park Maintenance Standards: The Manual and Evaluation Form*.

⁹ Timm, J. C. (2014, March 13). *San Francisco bans sale of plastic water bottles on city property*. Retrieved from MSNBC: <http://www.msnbc.com/msnbc/san-francisco-bans-sale-plastic-water-bottles-climate-change>

- **New York City, New York, USA**

Campaign – Water-On-The-Go

Water-On-The-Go, commenced since 2010, is a public awareness campaign by the New York City Department of Environmental Protection (DEP) for drinking water in public places.¹⁰ DEP places temporary portable NYC Water drinking fountains at public plazas, busy pedestrian areas, and parks around the city during the summer months to educate New Yorkers and visitors about the high quality of NYC Water and to promote tap water as an alternative to bottled water or sugary beverages. In 2010, DEP also partnered with Aveda to make Water-On-the-Go fountains available during New York Fashion Week in Manhattan, further promoting public drinking water.¹¹ By 2012, more than 500,000 people have been reached through the Water-On-the-Go campaign.¹²

Water-On-the-Go campaign also offers a mobile App, NYC Water that updates locations of drinking fountains during the summer, however, the total number of download on iTunes and Google Playstore is less than 5000. The actual effectiveness of promoting on mobile platforms is unsure.



Figure 2 - DEP and Aveda partnering for New York Fashion Week

¹⁰ Department of Environmental Protection . (2015). *NYC Water On the Go*. Retrieved from http://www.nyc.gov/html/dep/html/drinking_water/wotg.shtml

¹¹ Department of Environmental Protection. (2010, February 11). *DEP, Aveda to Promote NYC Tap Water During Fashion Week*. Retrieved from http://www.nyc.gov/html/dep/html/press_releases/10-14pr.shtml#.VX3E7fViko

¹² Department of Environmental Protection . (2013, June 21). *Department of Environmental Protection Marks Beginning of Summer with Launch of 2013 Water-On-the-Go Program*. Retrieved from http://www.nyc.gov/html/dep/html/press_releases/13-071pr.shtml#.VX4FNvlVikp

Campaign – 100 Fountains

100 Fountains is initiated by Pilot Projects, a design company that creates sustainable solutions to complex urban and workplace challenges. Commenced in 2010, 100 Fountains is a project aiming to revive the public drinking fountains in New York City, by creating a global public art competition for 100 new fountains in New York City. Currently underway, Pilot Projects has already conducted a flash mob named “Respect the Fountain” in order to research public opinion and promote fountain use.¹³



Figure 3 - "Respect The Fountain" by Pilot Projects

100 Fountains has successfully incorporated art and creativity to generate innovative and sustainable solutions to promote public drinking fountains. Both projects have harnessed the power of partnership and the community to reach a large audience to spread a positive image of drinking water in public areas.

Drinking Fountain Provision Policy

The Active Design Guidelines co-written by New York City Departments of Design and Construction, Health and Mental Hygiene, Transportation (DOT), & City Planning in New York City have included elements of drinking fountains in different areas. For example, in parks and open spaces, providing drinking fountains could “encourage consumption of tap water for rehydration.” Other locations include public plazas, grocery store parking lots and pedestrian pathways that can “support increased frequency and duration of walking.” Nonetheless, standards or specifications could not be found.

¹³ Pilot Projects. (2010). *100 Fountains New York City*. Retrieved from http://pilot-projects.org/wright-ingraham/images/uploads/Pitching-the-City-100-Fountains-Project_2013-03-08.pdf

Banning bottled water

In 2008, the New York City Council stopped purchasing bottled water for the Council's downtown offices. , This also meant that no bottled water can be served at city council events and other official functions. Then Mayor Michael Bloomberg wanted New York City to set an example on how cities can reduce the use of bottled water.¹⁴

¹⁴ Lee, J. 8. (2008, June 17). *City Council Shuns Bottles in Favor of Water From Tap*. Retrieved from The New York Times: <http://www.nytimes.com/2008/06/17/nyregion/17water.htm>

- **Vancouver, Canada**

Drinking Fountain Provision Policy

Drinking water fountains are installed and maintained by the City of Vancouver and Vancouver Park Board. Moreover, during heat waves, temporary fountains are placed in specific locations that mainly benefit the elderly, very young and homeless. There are currently 242 drinking fountains¹⁵, and additional 6 temporary ones. The locations of all drinking fountains could be readily found on the website of the city of Vancouver. Other assisting tools include a map and an iPhone app called Tap Map.¹⁶



Figure 4 - Example of drinking water fountain (left) and temporary fountain (right) by city of Vancouver

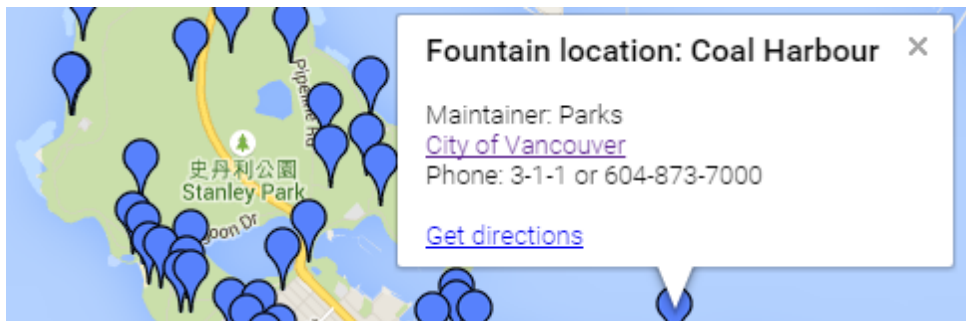


Figure 5 - Example of fountain location, including name, maintainer and phone

Moreover, in the “Greenest City 2020 Action Plan”, among the “highest priority actions for 2011-2014”, a particular action is directed to increase drinking fountains:

“Expand public access to drinking water and reduce use of bottled water. Deploy more portable fountains, as well as permanent freeze-resistant fountains, and water bottle filling stations.”¹⁷

Nonetheless, no specific target number of fountains could be found.

¹⁵ City of Vancouver. (2013). *Greenest City 2020 Action Plan: 2012-2013 Implementation Update*. Vancouver.

¹⁶ City of Vancouver. (2015). *Water fountains*. Retrieved from City of Vancouver: <http://vancouver.ca/home-property-development/water-fountains.aspx>

¹⁷ City of Vancouver. (2012). *Greenest City 2020 Action Plan*. Vancouver.

Petition – Take Back the Tap

In March 2015, Kelly Newton has initiated a petition called Take Back the Tap to eliminate plastic water bottles in Vancouver. As of June 2015, there is 7500 supporters and the target number is 10000.¹⁸

Banning bottled water

In 2009, Vancouver has eliminated the use of bottled water in civic offices.¹⁹ Afterwards, the city council has recommended the Vancouver Park Board, the Pacific National Exhibition, and other city-owned facilities to follow suit. However, they have estimated that a potential contractual loss of \$841,300 CAD could result from the ban.²⁰ Therefore, all parties have refused to pass the proposal.

In 2015, the Vancouver Park Board is considering banning bottled water sales, by the commissioner Wiebe. "The rationale behind a ban is entirely environmental," Wiebe said. Under Wiebe's proposal, there will be more fountains and filling stations at parks, and community centres would offer refillable water bottles to go with memberships.

However, due to a contract with Coca Cola granting exclusive rights to sell bottled water at all park facilities, the motion did not pass. Fortunately for Vancouver, the contract will end in November 2016.

Increasing public water infrastructures and leading by example are effective methods to improve public confidence in drinking fountains and drinking tap water in general. As Wiebe states, "It's a way to get people around the idea that our water is safe."²¹

¹⁸ Newton, K. (2015, March). *Take Back the Tap - Eliminate Plastic Water Bottles*. Retrieved from change.org: https://www.change.org/p/people-of-vancouver-take-back-the-tap?source_location=update_footer&algorithm=promote

¹⁹ CBC News. (2009, April 23). *Vancouver bans bottled water on city property*. Retrieved from CBC News: <http://www.cbc.ca/news/canada/british-columbia/vancouver-bans-bottled-water-on-city-property-1.861553>

²⁰ Fontaine, D. (2009, April 15). *\$841,300 in revenue could dry up with bottled water ban in Vancouver*. Retrieved from CityCaucus:

<http://archive.citycaucus.com/2009/04/vancouver-set-to-ban-bottled-water-sales>

²¹ CBC News. (2015, April 9). *Vancouver Park Board to consider banning bottled water sales*. Retrieved from CBC News:

<http://www.cbc.ca/news/canada/british-columbia/vancouver-park-board-to-consider-banning-bottled-water-sales-1.3026782>

- **Hong Kong**

Drinking Fountain Provision Policy

Drinking fountains are managed under the Hong Kong Leisure and Cultural Services Department (LCSD). In indoor sports complex, water activity centers, large stadiums, holiday camps, pools and sport grounds, the provision of drinking fountain has reached 100% of having at least 1 drinking fountains per venue. In major parks, the rate has reached 92% of the target mentioned above.²² The locations of water stations have also been included in the website of Leisure and Cultural Services Department (LCSD).

On 17 June 2015, an email is sent to LCSD regarding details of the provision of drinking fountains, the following is the response received on 14 July 2015.

*"As at Jan 2015, LCSD provides **1 135 nos. of drinking fountains** at all major sports venues including sports centers, sports grounds, swimming pools and holiday camps. Drinking fountains installed in LCSD venues are maintained by the government works departments. In order to maintain hygiene condition, drinking fountains should be **cleaned 7 times daily, 5 times using detergent and water**. For the first and the last cleaning before and after the closing hours of the venue, 1:99 household bleach solutions or 70% alcohol should be applied for thorough sterilization and rinsed with clean water afterwards. Besides, **replacement of the water filter and the ultra-violet tube should be conducted at least once every 3 months and 6 months respectively** or accordingly to manufacturers' instructions.*

The above response includes the party responsible for maintenance, cleaning frequency and methods, and the frequency of maintenance of water filters and ultra-violet tubes[^]. It is highly encouraged that such information to be published online for other cities to refer from.

²² Leisure and Cultural Department. (2015). *Supervisor reply for 2015-2016 expense budget (HAB222)*. Retrieved from http://www.lcsd.gov.hk/b5/doc/HAB222_c.pdf

[^] Ultra-violet tubes are or killing microorganisms and bacteria and is a common practice in water purification plants in Hong Kong.

Signs and Posters

In most areas, signs and posters have been put up to identify the existence of water stations. The poster in Figure 6 reads *“Please be considerate. Keep the drinking fountain clean”*. Moreover, it also includes dates which indicate when the filters and ultra-violet tubes were last replaced. A “Health Advice on using drinking fountains” has been issued by the Department of Health²³, which would be put alongside the posters to remind users to be aware of the cleanliness of public drinking fountains.

Below is the content of the Health Advice Poster:

“Health advice on using drinking fountains

It is important to keep the mouthpiece and protective guard of drinking fountains free from contamination with oral and respiratory secretions. The following hygiene advice is recommended on the use of drinking fountains.

- 1. Avoid contact with the mouthpiece and protective guard of the drinking fountain when drinking directly from it.*
- 2. Young children should preferably use a container to collect water from the fountain for drinking, and not drink directly from the fountain.*
- 3. People who are suffering from an acute respiratory illness should avoid drinking directly from drinking fountains.*
- 4. Do not contaminate the drinking fountain, for example, by spitting or using it to wash hands.”*

These measures are highly effective in increasing public awareness, and improving public confidence in utilizing public drinking fountains.

²³ Department of Health. (n.d.). *Health advice on using drinking fountains*. Retrieved from http://www.chp.gov.hk/files/pdf/guidelines_on_use_of_drink_fountain_public.pdf



Figure 6 - Drinking station in a sports facility in Hong Kong, including signs, posters and health advice

Recommendation by Civic Exchange

Civic Exchange, an independent Hong Kong-based public policy think tank, recently published a report on bottled water consumption. According to the report, the main reason for the public to opt for either tap water or bottled water is convenience. For both choices, convenience/ availability is the top reason for each drinking option, accounting for 37% for tap and 58.2% for bottled water. Therefore, in the context of Hong Kong, high accessibility is key to high public usage. Thus, the report recommends high-quality dispensers should be positioned in prominent locations such as MTR stations, bus terminuses, shopping malls and outside wet markets/ community complexes.²⁴

²⁴ Lai, C. & Lao, M. (2015). *Reducing Plastic Waste in Hong Kong: Public Opinion Survey on Bottled Water Consumption and Attitude Towards Plastic Waste*. Hong Kong: Civic Exchange.

- **Taipei, Taiwan**

Infrastructure

In June 2009, the Taipei Water Department cooperated with Taipei Mass Transit Corporation to place drinking fountains in 39 mass transit stations.²⁵ (As of July 2015, there is 117 stations in Taipei area.) Such action could expand tap water accessibility to more public places, especially high-traffic stations.

In 2015, Taipei city new mayor Ko Wen-Je believed that safe drinking water is one of the three basic services for its residents, alongside with access to toilets and wireless internet connections. Therefore, he is active in promoting Taipei's tap water quality and drinking fountains. He has publicly used a mobile drinking fountain at Taipei Expo Park.²⁶

QR Code

Ko also unveiled a QR Code providing information on drinking fountains to residents and visitors. Each mobile drinking fountain is labeled with "Taipei Wonderful Water" QR Code allowing citizens to check the latest status of water quality test with mobile phones. The QR code could increase the confidence of Taipei citizens in consuming tap water.²⁷

²⁵ Taipei Water Department. (2009). *The High Quality of Tap Water*. Retrieved from Taipei Water Department: <http://english.water.gov.taipei/ct.asp?xItem=994056&CtNode=23900&mp=114012>

²⁶ Taipei City Police Department. (2015, March 2). *Mayor: Working to Provide Increased Drinking Water Fountains*. Retrieved from Taipei City Police Department: <http://police.gov.taipei/ct.asp?xItem=98437545&ctNode=15854&mp=108002>

²⁷ Taipei Water Department. (2015, May 11). *Promoting Direct Drinking of Taipei Wonderful Water*. Retrieved from Taipei Water Department: <http://english.water.gov.taipei/ct.asp?xItem=103972748&ctNode=23854&mp=114012>

- **London, U.K.**

According to a survey by Children's Food Campaign, the lack of drinking fountains in the United Kingdom is severe. Only 11% of the parks surveyed had drinking fountains and not every fountain is in working order.²⁸ Furthermore, in London, there is only a drinking fountain per 100,000 local citizens.²⁹ The need for more drinking fountains in London cannot be overlooked.

Re-designing Drinking Fountains

Apart from the lack of drinking fountains, most of the drinking fountains in London are in poor condition. Therefore, there are several campaigns in attempt to re-design drinking fountains in existing or new locations.

An international design competition was launched by the Royal Parks Foundation and sponsored by the Tiffany & Co Foundation in 2010. Ultimately, the winning designs are "Trumpet" and "Watering Holes". The former is located in Kensington Gardens and the latter is in Green Park, London.³⁰

At Hyde Park, there is a new public drinking fountain designed and made by David Harber. The Freeman Family Fountain, is the first fountain to be installed in Hyde Park in 30 years, and it is hoped that it can promote water consumption among park users. ³¹

²⁸ Christine Haigh, J. S. (2010). *Thirsty Play: A survey of drinking water provision in public parks*. London: Children's Food Campaign

²⁹ Find-a-fountain. (2011). *Find-a-fountain: FAQ*. Retrieved from <http://www.findafountain.org/faq>

³⁰ Kennedy, M. (2010, November 7). *Judges go with the flow in royal parks water fountain competition*. Retrieved from The Guardian:

<http://www.theguardian.com/artanddesign/2010/nov/08/royal-parks-plumbs-for-joint-fountain-winners>

³¹ Harber, D. (2011). *HYDE PARK PUBLIC DRINKING FOUNTAIN*. Retrieved from David Harber:

http://www.davidharber.com/news/drinking_fountain.htm

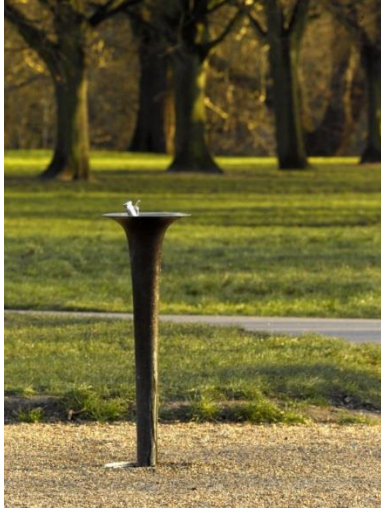


Figure 7 - "Trumpet" in Kensington Gardens



Figure 8 - "Watering Holes" in Green Park



Figure 9 - Freeman Family Drinking Fountain in Hyde Park

Another design competition in 2014 was organized by Rory Olcayto of the Architects' Journal and sponsored by the Turkish Ceramics trade body. The designers were able to choose between spots on streets in London as possible sites.³²



Figure 10 - Proposed designs of competition organized by Rory Olcayto of the Architects' Journal

Such local and international competitions have been a significant effort to revitalize the public's confidence in drinking fountains while combining the creativity of designers. The objectives are similar to the 100 Fountains campaign in New York City.

Partnership with Thames Water and Hydrachill

An initiative by Thames water, Britain's largest privatized water supply company, and Transport for London is allowing commuters to get access to free chilled and filtered water. A Hydrachill Water Refilling Station is placed at Hammersmith Bus Station and Tube station in London for commuters to refill their containers for free. Commuters could also purchase an empty 500ml reusable bottle for 2 pounds.

This is a public-private cooperation which promotes drinking tap water and reduces the purchase of bottled water, resulting in a win-win situation for the mayor of London, Thames Water and Hydrachill. As the founding director of Hydrachill puts, "The focus on mains water as a healthier, more environmental option grows exponentially."³³

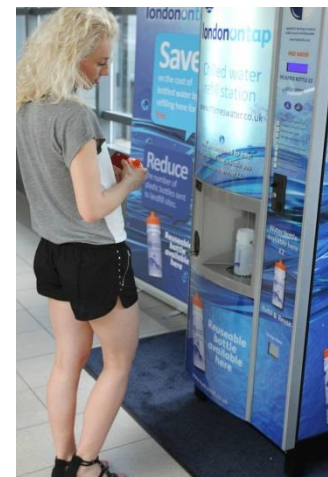


Figure 11 - Hydrachill water refilling station in Hammersmith Bus Station

³² Time Out London. (2014, February 20). *Public drinking fountains could be making a comeback*. Retrieved from Time Out London blog:

<http://now-here-this.timeout.com/2014/02/20/public-drinking-fountains-could-be-making-a-comeback>

³³ Ellsbury, H. (2014, June 30). *FREE ACCESS TO FILTERED WATER FOR LONDON TUBE COMMUTERS*.

Retrieved from Ban The Bottle:

<https://www.banthebottle.net/articles/free-access-to-filtered-water-for-london-tube-commuters>

- **Amsterdam, the Netherlands**

Infrastructure

As a part of an anti-obesity campaign, Amsterdam City Council is proposing to install 300 new drinking water fountains around the city. Currently, 160 fountains have already been installed.³⁴ Different from other campaigns included in this paper, the installation of these drinking fountains in Amsterdam focuses on the health aspect of drinking water over sugary beverages.

Another policy to increase drinking fountain is a recent bill passed that requires all festival organizers to provide free tap water to attendees. The law requires a single fountain will be required for every 150 people attending the event.³⁵ With many large events around in Amsterdam, such a law could encourage the consumption of tap water among local residents.



Figure 12 - An event attendee enjoying free drinking water in Amsterdam

³⁴ Dutch News. (2015, March 20). *Amsterdam installs drinking water fountains in anti-obesity campaign*. Retrieved from Dutch News: <http://www.dutchnews.nl/news/archives/2015/03/amsterdam-installs-drinking-water-fountains-in-anti-obesity-campaign>

³⁵ Shannon, P. (2014, August 28). *FREE WATER IS NOW A REQUIREMENT FOR FESTIVALS IN AMSTERDAM*. Retrieved from YourEDM: <http://www.youredm.com/2014/08/28/free-water-now-requirement-festival-amsterdam/>

Best Practices in Cities within the United States

Cities	Best Practices
Oskaloosa City, Iowa	Adoption of Public Water Fountain Policy
Irvine, California	Specifications of drinking fountains in Park Standards Manual
Concord, Massachusetts	First town in the U.S. to ban single-served water bottles

- Oskaloosa City, Iowa

The Public Water Fountain Policy was passed and approved on March 2, 2015. The main objective of the Policy is to broaden the public’s access to drinking water through drinking fountains at public parks and municipal buildings. The cost of outdoor freeze-resistant drinking fountains range from \$2,500 to \$4,500.

The Policy requires:

“accessible public drinking fountains upon new construction or reconstruction of any park or municipal building. The drinking fountains must be fully accessible to adults, children, and people with disabilities. Drinking fountains must be maintained and on a consistent maintenance schedule.”³⁶

The Public Water Fountain Policy can significantly increase the accessibility of drinking fountains and ensure the maintenance of fountains for public use.

³⁶ City of Oskaloosa City Council . (2015, March 2). *Public Water Fountain Policy*. Retrieved from City Council Communication:
<http://www.oskaloosaiowa.org/AgendaCenter/ViewFile/ArchivedAgenda/03022015-243?packet=tru>

- **Irvine, California**

Under the Parks Standards Manual in the City of Irvine, detailed specifications have been listed under *Section VIII. Public Facilities Equipment Specifications: 4. Drinking Fountains*. Specification include the fountain, pads & positioning, fasteners, drains, valves, strainers, backflow devices, location, accessibility and preferred model.³⁷

While most of the city plans did not include specifications for drinking fountains, this Manual is worth referencing from. Objectives standards can ensure that drinking fountains are properly installed and maintained.

- **Concord, Massachusetts**

In 2013, the Town of Concord is first town in the United States to fully ban single-served water bottles. The first offense results in a warning, the second in a \$25 fine, and the third in a \$50 fine. The enforcement agency is the Concord's Health Division staff. The act was recognized by the Environmental Protection Agency (EPA) in 2015.

The detail of the bylaw is as follows:

*"It shall be unlawful to sell non-sparkling, unflavored drinking water in single-serving polyethylene terephthalate (PET) bottles of 1 liter (34 ounces) or less in the Town of Concord on or after January 1, 2013."*³⁸

³⁷ City of Irvine. (2000). *Park Standards Manual: Section VIII. Public Facilities Equipment Specifications: 4. Drinking Fountains*. City of Irvine

³⁸ Town of Concord, Massachusetts. (2012). *SALE OF DRINKING WATER IN SINGLE-SERVE PET BOTTLES BYLAW*.

What is happening in Los Angeles, California? The Good and The Bad.

In order to facilitate the improvement of the provision of drinking fountains in Los Angeles, this part is to review the current progress of Los Angeles, which includes the good and the bad. Afterwards, several recommendations would be given in the next section.

Good: Campaign – TAP Water Day

The first annual TAP Water Day LA is a good first step for Los Angeles and LADWP to rethink the provision of drinking fountains. On May 7, 2015, the first TAP Water Day LA was held at the Balboa Sports Center in Encino, led by the Department of Water and Power and the Department of Recreation and Parks. The TAP Water Day is to increase the awareness of Los Angeles clean, reliable drinking water. As the founding director of WeTap, Evelyn Wendel said, "Tap Water Day is a call to action to remind us to trust, drink and celebrate the tap and be a champion of local drinking fountains."

Moreover, new drinking water stations unveiled on TAP Water Day LA will be placed in a variety of locations in all of the council districts throughout the city where residents can fill up their reusable water bottles.³⁹



Figure 13 - First Annual Tap Water Day LA

³⁹ Rodriguez, A. (2015, May 7). *LA Celebrates TAP Water Day to Highlight Benefits of City's Clean Drinking Water*. Retrieved from LADWP Newsroom: <http://www.ladwpnews.com/go/doc/1475/2503010/LA-Celebrates-TAP-Water-Day-to-Highlight-Benefits-of-City-s-Clean-Drinking-Wate>

Good: Mobile – WeTap

WeTap is an organization founded in 2008 that aspires to “improve awareness, access and use of public drinking fountains, reducing dependence on single-use plastic.”⁴⁰ In 2012, LADWP partnered with WeTap to launch a smartphone application for users to locate nearby drinking fountains in Los Angeles. WeTap can display each drinking fountain’s operating conditions, locations and a photo.⁴¹ WeTap also expands its mobile accessibility through Twitter, Facebook and Instagram. Unfortunately, as of July 2015, WeTap App can only be downloaded through iTunes and unable to be downloaded on Android systems. The actual effectiveness of such platforms in expanding WeTap’s popularity is unsure.

Bad: Conditions of Existing Drinking Fountain Infrastructure (by Water Works Project)

Water Works Project is a community/ campus collaboration initiated in Occidental College since April 2013. In spring 2014, a drinking fountain assessment was executed. Drinking fountains in 20 parks in Northeast and South LA were examined.

Main findings are as follows:

- “1. Drinking fountains were not well maintained; 1 in 10 were not working.*
- 2. 38% of the parks had one of more water fountains located next to a trash can.*
- 3. The levels of copper were high at some parks. Two fountains at Eagle Rock Recreation Center had copper levels that exceeded 1000 ppb (still under the MCLG but extremely high in comparison to the PHG)”⁴²*



Figure 14 - Examples of poorly managed drinking fountains in Eagle Rock

⁴⁰ WeTap. (2013). *WeTap*. Retrieved from wetap.org

⁴¹ Ramallo, J. (2012, February 17). *New Smartphone App, WeTap, Helps LADWP Customers Locate Free Drinking Water from Drinking Fountains*. Retrieved from LADWP Newsroom: <http://www.ladwpnews.com/go/doc/1475/1311099>

⁴² Water Works project. (2014). *Promoting community access to clean & safe drinking water in Los Angeles*. Los Angeles. Retrieved from Water Works project.

As depicted in the two photos above, these poorly maintained drinking fountain infrastructure is commonplace and easy to be observed in many LA parks. They often lack location signage and proper maintenance policies and the party responsible for maintenance is unknown.

Bad: Motion - “WeTap/ Restoration of Public Water Drinking Fountains”

On 17 September 2013, former councilmember Tom Labonge has put forth a motion to improve the accessibility of public drinking fountains in Los Angeles. The Council File (13:1234) is titled “WeTap/ Restoration of Public Water Drinking Fountains”.

As he observes the benefits of public drinking fountains, the motion is as follows:

“I THEREFORE MOVE the Los Angeles Department of Water and Power be requested to work with organizations (such as WeTap) to study and report back to the Energy and Environment Committee on a comprehensive plan to upgrade, restore and bring back public water fountains in public spaces in the City of Los Angeles.”⁴³

The responsible committee of this motion is the Energy and Environment Committee. Unfortunately, after 16 January, 2014, no follow-up actions could be found. This Council File will be expired on 4 December, 2015.⁴⁴ Up until July 2015, no report or plan has been completed by LADWP or WeTap.

Bad: Drinking Fountain Provision Policy

In the “Plan for a Healthy Los Angeles”, drinking fountains have been categorized as Basic Amenities. For example, in section 3.2 Expand Parks, the provision of drinking fountains has been included as such:

“Future construction or redevelopment of parks should include basic fixtures such as water fountains and restrooms.”⁴⁵

Further specifications or standards could not be found.

⁴³ Labonge, T. (2013, September 17). *City Council Motion - Bring public water fountains back to LA*. Retrieved from http://clkrep.lacity.org/onlinedocs/2013/13-1234_mot_9-17-13.pdf

⁴⁴ City of Los Angeles. (2015). *Council File: 13-1234 (WeTap / Restoration of Public Water Drinking Fountains)*. Retrieved from LA CityClerk Connect:

<http://cityclerk.lacity.org/lacityclerkconnect/index.cfm?fa=ccfi.viewrecord&cfnumber=13-1234>

⁴⁵ Los Angeles Department of City Planning. (2015). *Plan for a Healthy Los Angeles*. Los Angeles

Highlights and Recommendations

After observing best practices and other information from numerous international and U.S. cities, this section of the paper will highlight four areas that is essential for Los Angeles to consider in order to expand its public drinking fountain infrastructure and utilization. In each part, successful examples from different countries will be included for reference.

- **Infrastructure** – Improving drinking fountain infrastructure

Adequate infrastructure is the first step to promoting the use of drinking fountain among citizens and visitors. As the Water Works project has proved, the conditions of drinking fountains in LA are dissatisfactory and could generate negative perceptions to the general public. The Water Works project propose that “ubiquitous access to, and visibility of public water sources can promote increased consumption of water as the healthiest alternative”. Therefore, it is strongly urged that **installation and maintenance policies should be set up**, including the responsible party, frequency of maintenance and an inventory list of all drinking fountains in LA.

Number of drinking fountains made available is crucial as well. A successful story that is close to Los Angeles is Water-On-the-Go in New York City. By placing temporary drinking fountains at high-traffic locations can allow tap water to reach the greatest amount of users. Another city which places portable fountains in summer is Vancouver. No matter which audience these fountains is aiming to reach, increased infrastructure must improve the accessibility of drinking water in public areas.

Other examples of the provision of public drinking fountains are Hong Kong, Taipei and Amsterdam. Although having varying motivations, all three cities increased the infrastructure of drinking fountains. Hong Kong LCSD has reached full exposure in most of its facilities, with a total of over 1000 drinking fountains, Taipei has cooperated with its Mass Transit to install fountains in stations and Amsterdam has installed extra fountains in its anti-obesity campaign and in festivals.

- **Perception** – Improving user perception

The problem of negative perception of tap water and water fountains is prevalent in United States. In a recent report, it is found that nearly 20% participants disagreed that their tap water was safe.⁴⁶ Therefore, apart from improving accessibility, Los Angeles government must establish trust within its citizens on the high quality of drinking water.

Having the first annual Tap Water Day in May 2015 is definitely the first step of Los Angeles, Los Angeles could take reference from New York City's Water-On-the-Go campaign. By putting promoters around the portable drinking fountains, tap water drinkers could hear directly from the promoters on the benefits of tap water and gain trust on the water that is offered to them.

Hong Kong has shown a very promising image to its fountain users, including setting up signs, posters, health advices and latest maintenance updates. The frequency of cleaning and replacing filters and UV tubes are also very impressive.

As a first step, a simple poster highlighting the benefits of tap water could be adopted as a promotional tool.

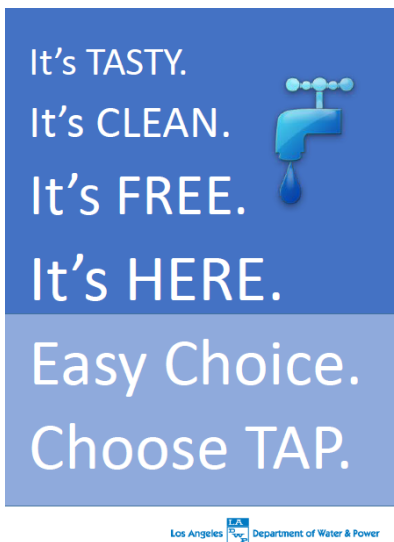


Figure 15 - Poster sample to be put on drinking stations

⁴⁶ S.J. Onufrak, S. P. (2014). Perceptions of tap water and school water fountains and association with intake of plain water and sugar-sweetened beverages. *The Journal of School Health*, 84(3), 195-204

- **Partnership** – Increasing public-private partnership

In many cases from international cities, the expansion of drinking fountain involves public-private partnerships. For example, San Francisco has partnered with GlobalTap and TapIt. New York City has partnered with Aveda to promote drinking fountains during New York Fashion Week. London has partnered with Thames Water and Hydrachill.

By choosing suitable partners with similar objectives, these partnerships have successfully improved either infrastructure or perception of drinking fountains in their respective cities. As raised by the LA City Motion, LADWP should work with organizations like WeTap to upgrade and restore public drinking fountains. Moreover, Los Angeles should also consider partnering with GlobalTap. As there is already two GlobalTap stations in Santa Monica (at the pier and at 3rd Street Promenade)⁴⁷⁴⁸, it is highly possible that GlobalTap could speed up the increase in drinking fountain infrastructure in Los Angeles.

- **Awareness** – Increasing community awareness

After improving accessibility and perception of drinking fountains, it is also essential to spread the message to a larger audience. Therefore, numerous campaigns can be observed from New York City and London, including 100 Fountains and other design competitions. Tap Water Day LA is hoped to reach more LA residents and visitors as well.

Moreover, mobile promotions have been observed in most cities, including New York City, Vancouver, Hong Kong, Taipei and London, through mobile Apps, online maps or QR code. However, the actual effectiveness is in doubt due to a low number of downloads or usage rate. Nonetheless, online promotions should not be overlooked.

Ultimately, Los Angeles could continue the good practices of San Francisco, New York and Vancouver in banning bottled water in City Council to set a good example in reducing the use of bottled water and increasing the use of tap water. Such acts could arouse the public's attention in realizing the benefits of drinking tap water.

⁴⁷ GlobalTap. (2013, July 22). *GLOBALTAP | Santa Monica Pier*. Retrieved from TAP News: <http://blog.globaltap.org/?p=379>

⁴⁸ GlobalTap. (2013, July 22). *GLOBALTAP | Santa Monica – 3rd Street Promenade*. Retrieved from TAP News: <http://blog.globaltap.org/?p=356>

Bringing Back Drinking Fountains in Universities and Colleges

As part of the effort to bring back drinking fountains, this research aims to assist Occidental College in Los Angeles (where this research took place) to discourage bottled water consumption and increase the use of drinking fountains in campus. Therefore, in this section, three universities in the United States and one from Hong Kong are chosen as reference.

- Washington University in St. Louis, Missouri, USA

Washington University in St. Louis (WUSTL) is the first university to ban the sale and use of bottled water in the United States since 2009. This ban has become the pioneer for other universities and colleges to follow suit. WUSTL's ban eliminates 386,000 bottles and saves 15,000 gallons of oil each year.⁴⁹ Moreover, WUSTL's "Less Is More" campaign also encourages staff and students to use reusable water bottles, showing a continuous effort to reduce the consumption of bottled beverages.

In this movement, 20 students was heavily involved in the "Tap it" campaign, led by WUSTL junior Kady McFadden. The campaign included taste tests, signs and table tents throughout campus. Apart from "Tap it" campaigners, the ban also received support from WUSTL sustainability, Washington University Dining Services and all WUSTL students.⁵⁰

- University of Portland, Oregon, USA

"Take Back the Tap" is a student organization that is behind numerous movements to ban all bottled water in college campuses. One of the examples is the University of Portland (UP). In 2009, the University of Portland used 53,112 disposable plastic water bottles. Since Feb 1 2010, the university had a full ban on disposable plastic bottles.⁵¹

⁴⁹ Washington University in St. Louis. (2013). *Recycling / Waste Reduction: Bottled Water Ban*. Retrieved from Washington University in St. Louis Sustainability:

<https://sustainability.wustl.edu/campus-operations/waste-reduction>

⁵⁰ Daues, J. (2009, February 20). *Washington University in St. Louis ends sales of bottled water*. Retrieved from Washington University in St. Louis: Newsroom: <http://news.wustl.edu/news/Pages/13554.aspx>

⁵¹ Furey, J., & Kuffner, J. (2010, January 26). *Disposable plastic water bottles no longer available for sale at University of Portland*. Retrieved from University of Portland: News: <http://www.up.edu/news/showNews.aspx?id=3950>



Figure 16 - Examples of student-led "Take Back the Tap" campaigns

This ban is successful with the help of "Take Back the Tap" student group, the Presidential Advisory Committee on Sustainability and Bon Appetit, the University's food service provider. UP now uses glass bottles with a stopper and biodegradable cups. They are also selling stainless steel-lined aluminum water bottles for \$4 to encourage students to use drinking fountains⁵²

- **University of Iowa, Iowa, USA**

The University of Iowa (UI) is distinctive from the previous two universities because it has failed to ban water bottles on campus due to contractual agreements between the university and Coca-Cola. Nonetheless, the University of Iowa has found a solution, which is to install hydration stations on campus.

Led by Kelsey Zlevor, UI Student Government sustainability initiative advocate, and students from Take Back the Tap, the University of Iowa has installed 14 hydration stations throughout the campus. Each station costs \$934, including labor. The hydration stations are also equipped with a sensor which tracks how many bottles have been saved.⁵³ Though infrastructure is less direct in terms of reducing use of bottled water, it can increase students' awareness and confidence in drinking fountains.

⁵² Grote, D. (2012, April 12). *Contract with Coca Cola forces UI students to find new solution for sustainable water practices*. Retrieved from The Daily Iowan: <http://www.dailyiowan.com/2012/04/12/Metro/27906.html>

⁵³ Sturrock, C. (2010, February 12). *University of Portland makes a statement, halts bottled water sales*. Retrieved from OregonLive: http://blog.oregonlive.com/pdxgreen/2010/02/university_of_portland_makes_a.html

- **Chinese University of Hong Kong, Hong Kong**

Although the Chinese University of Hong Kong (CUHK) has not banned bottled water on campus, it has initiated a few campaigns as part of their Waste Reduction plan. Examples include sponsorship of water bottles for freshmen during their Orientation Camps and a campus map showing all water dispenser locations within the CUHK Mobile App.⁵⁴ Despite having contracts with beverage companies like Coca Cola, CUHK has planned to remove part of automatic beverage vending machines around campus.⁵⁵



Figure 17 - CUHK Campus Map showing locations of water dispensers

- **Recommendation to Occidental College and other Universities or Colleges**

Taking reference from the four cases above, most of the movements has been initiated by student groups (“Tap It” or “Take Back the Tap”) or campus sustainability groups, with the support of on-campus dining services, and more importantly, all students.

Occidental College has been initiating educational campaigns as part of an effort to reduce consumption of bottled water. Simple actions include providing reusable water bottles for freshmen (which has been underway) and developing a campus map that shows all locations of drinking fountains.

In the future, it is recommended that relevant student groups, sustainability groups and dining services should cooperate closely to discuss on the banning of bottled water or the installation of new hydration stations. Options also include partial bans on certain venues or events on campus as a first step.

⁵⁴ The Chinese University of Hong Kong. (2014). *Sustainability at CUHK: Waste Reduction*. Retrieved from The Chinese University of Hong Kong: http://www.cuhk.edu.hk/sustainability/en/our_work/campus/waste.html

⁵⁵ MingPao. (2015, July 1). 環保路上，大學應走得更前. Retrieved from MingPao News: http://news.mingpao.com/pns/%E7%92%B0%E4%BF%9D%E8%B7%AF%E4%B8%8A%EF%BC%8C%E5%A4%A7%E5%AD%B8%E6%87%89%E8%B5%B0%E5%BE%97%E6%9B%B4%E5%89%8D/web_tc/article/20150702/s00005/1435773820081

Conclusion

Ultimately, it is believed that the provision of drinking fountain is only a part of a larger movement on “rebranding” tap water. This movement requires a lot of action from expanding and maintaining the public infrastructure to community outreach and education. It is hoped that this paper can serve as a reference for Los Angeles to become more proactive in taking initiatives to promote the use of drinking fountains and minimize the expensive and unsustainable consumption of bottled water.

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